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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Reallocation of Television Channels	)	ET Docket 97-157
60 - 69, the 746 - 806 MHz Band	)	

To: The Commission

REPLY COMMENTS
of the
NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL

The National Public Safety Telecommunications Council (NPSTC) hereby submits the following Reply Comments filed in response to the Commission's Notice of Proposed Rulemaking in the above-captioned proceeding. NPSTC submitted initial comments in this proceeding, as did a number of its member organizations.

I. TRANSFER OF 24 MHz OF SPECTRUM TO PUBLIC SAFETY

Several commenters recommended that the Commission take steps which would be in direct conflict with the express statutory requirements of the Balanced Budget Act of 1997 to transfer 24 MHz of spectrum to public safety by December 31, 1997. Some commenters also raise issues that are more properly addressed in the Commission's recently adopted Further Notice of Proposed Rule Making (FNPRM) in WT Docket 96-86 proposing service rules for public safety use of the 24 MHz.

The Community Broadcasters Association (CBA), representing low power TV stations, argues that the Commission should only allocate 6 MHz at a time depending upon public safety needs in particular areas. However, this approach would be contrary to the statute, which requires all 24 MHz to be allocated by December 31, 1997. Furthermore, this suggestion is contrary to the PSWAC recommendation that public safety have nationwide uniformity for interoperability purposes. Similarly, KSL Television argues for market-by-market allocations of spectrum for public safety, which is also contrary to the statute (to the extent it yields less than 24 MHz in any particular area) and undermines interoperability.

The CBA also recommends that public safety users be required to pay the cost of relocating low power stations. Public safety users cannot, and should not, be required to pay the costs to move secondary broadcast NPSTC operations to make room for communications operations necessary for the protection of life and property. In any event, many of CBA's concerns will be met if low power users are not required to vacate spectrum until it is needed by a public safety user.

KSLS, Inc. (licensee of KCSI, ch 18 in San Bernardino) suggests that the solution to the Los Angeles problem is to move land mobile radio users from channels 16 and 20 to channels 68 and 69, with the DTV channels now allotted 68 and 69 moving down to channels 14-20. Obviously, this would do nothing more than force the relocation of current public safety radio systems, without any net gain in spectrum for public safety, and would be contradictory to the intent of Congress to provide an additional 24 MHz to public safety.

II. THE COMMISSION SHOULD ADOPT PUBLIC TELEVISION'S RECOMMENDATIONS TO ALLOW MORE RAPID PUBLIC SAFETY USE OF CHANNELS 60-69.

NPSTC supports the suggestions of the Association of America's Public Television Stations and the Public Broadcasting Service (APTS/PBS) that the Commission should allow stations with DTV allotments on channels 60 - 69 (there are 15 such stations) to relinquish their DTV allotment in exchange for permission to convert their NTSC station to digital at the end of the DTV transition. This might be an attractive option for some of the stations with DTV allotments in channels 60-69. It would allow them to adjust viewers to the new channel assignment before everyone else moves to new channels, and the antenna system on the new channel allotment, which would have to be constructed anyway, will serve both the analog or the DTV transmission modes. Moreover, the proposal would provide for far quicker use of 746-806 MHz frequencies by public safety in areas impacted by the 15 DTV allotments. NPSTC also supports APTS/PBS's suggestion that current analog stations in channels 60-69 should be allowed to move their analog operations to their "core" channel 7 - 59 DTV allotment until they convert it to digital.

NPSTC also supports Tribune Broadcasting's comments insofar as Tribune urges the Commission to eliminate DTV allotments in channels 60-69. However, Tribune also states that until that occurs, new users must protect the DTV stations operating in the band, which could limit public safety operations. NPSTC has requested that the Commission take immediate steps not to allow new DTV stations to construct in channels 60 - 69, which it believes is the only appropriate solution to this problem.

III. PUBLIC SAFETY REQUIRES SEPARATED BASE AND MOBILE CHANNEL BLOCKS.

The National Association of Broadcasters and the Association of Maximum Service Telecasters argue that public safety should be allocated four contiguous channels (66, 67, 68, and 69) to reduce adjacent channel problems and facilitate new broadcast service in the remaining channels. They challenge the need for channel separation contained in the Commission's proposed allocation of channels 63,64,68, and 69, which NPSTC supports.

Separate base and mobile transmit channel blocks are required by public safety for a number of compelling reasons. Mobile relay systems, which permit the use of portable radio equipment in areas where signals from the low power portable would not otherwise reach the infrastructure receivers due to such factors as in-building signal penetration, and topographic and foliage losses, require frequency separation for simultaneous receive and transmit in ever increasingly smaller vehicles. The duplexer devices that are used for such systems becomes quite large where close frequency separation is required.

Moreover, a mobile (or portable) unit may need to contact a dispatcher during a dispatcher's transmission. The infrastructure transmitter frequency must be removed sufficiently from the receiver frequency so that receiver desensitization does not occur. Additionally, multiple radio channels operating at a common site require separation of transmit and receive frequencies for the same reason and also to ensure that intermodulation products do not have an impact upon receivers. In major urban areas, it is common to use distributed and radiating antenna systems to extend system infrastructure radio coverage by the use of underground and in-building antenna systems. Transmitter-receiver separation is imperative to prevent intermodulation interference to low power signals in these common antenna networks.

As noted in our comments, NPSTC recommends that the Commission allocate 36 MHz of spectrum to be auctioned to compatible land mobile commercial services. A consistent 30 MHz

separation of base and mobile transmit frequencies would be of significant benefit to commercial systems also.[1]

IV. FEDERAL ACCESS TO PUBLIC SAFETY CHANNELS IN THIS SPECTRUM.

While NTIA points out that the Commission failed to provide for federal access to the public safety channels, this issue may more properly belong in the separate proceeding to establish service rules for the 746-806 MHz band. NPSTC believes that interoperability between federal state and local public safety entities is an important goal, and fully intends to support federal use of the mutual aid channels in accordance with a national public safety plan.

V. GLOBAL POSITIONING SYSTEM (GPS) RECEIVER INTERFERENCE.

Aeronautical Radio, Incorporated (ARINC) raises concerns regarding the fact that the second harmonic of the 779-805 MHz band is in 1559-1610 MHz, an aeronautical radio band. The comments suggest the need for standards for out-of-band suppression. In this proceeding, the Commission stated that channelization and technical standards will be covered in a Further Notice of Proposed Rule Making. NPSTC has, however, considered the impact of second harmonic radiation upon GPS receivers that may, in fact, be an integral part of a public safety mobile system. We note that the GPS system uses the spread spectrum mode of communication, and the second harmonic of 787.71 MHz would fall on the Coarse Acquisition channel of 1575.42 MHz (however, we also note that average public safety transmit lengths are on the order of 4½ seconds, similar to the loss of signal while in metropolitan traffic, traveling under a bridge or dense foliage, or behind a tall building). Therefore, if the Commission adopts its proposed allocation of 764-776/794-806 MHz for public safety, any potential second harmonic impact

[1] NPSTC also supports Nextel's recommendation that channels 68 and 69 not be used for land mobile base stations, due to concerns about interference to 806 MHz systems.

upon GPS would not result from public safety operations. NPSTC supports ARINC in that the Commission should address such concerns in the proper proceeding and develop satisfactory, practical technical standards that will ensure aeronautical safety and satisfactory use of GPS.

VI. COMMERCIAL CONTRACTORS SHOULD NOT HOLD LICENSES FOR PUBLIC SAFETY SPECTRUM.

NPSTC, following the lead of PSWAC, believes that to properly exercise control over public safety spectrum, licenses should only be held by governmental entities. To the limited extent that the legislation allows for use of the 746-806 MHz public safety frequencies by non-governmental entities, that must be narrowly interpreted to include only non-profit organizations that have the protection of life or property as their sole or principal purpose, and which are expressly authorized by a governmental public safety agency to provide such safety services (e.g., volunteer fire departments). A for-profit entity, such as Compu-Dawn, does not suddenly become "authorized" by a public safety agency merely because it has a contract to provide a communications service to that agency.

VII. DTV ADJACENT CHANNEL IMPACT IS WORSE ON LAND MOBILE THAN PREVIOUSLY IDENTIFIED.

In our original comments, with respect to DTV impact on adjacent channel land mobile receivers, a power bandwidth correction factor was inadvertently taken twice, which resulted in the DTV impact upon adjacent channel land mobile being shown 10.8 dB less than it should have correctly been noted[2]. This results in the calculated value of +90dBm (1 megawatt assumed) - 46dB + 10log(12.5/500) = +90-46-16= +28dBm instead of the original conclusion of +17.2dBm.

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[2] Corrected references:
Per paragraph 56, DTV 5th FNPRM:

-35 dB out-of-band emission level measured in a 500 kHz bandwidth referenced to DTV power level measured in 500 kHz bandwidth [need to subtract 11 dB to convert total DTV power in 6 MHz signal bandwidth to DTV power measured in 500 kHz and then add conversion for 12.5 kHz LMR receiver bandwidth to 500 kHz out-of-band emission measurement bandwidth]

Per paragraph 195, DTV 6th R&O:

-46 dB out-of-band emission level measured in a 500 kHz bandwidth referenced to DTV power level measured in 6 MHz bandwidth. [already includes the 11 dB delta for DTV measurement bandwidth, reference 12.5 kHz LMR receiver bandwidth to 500 kHz out-of-band emission measurement bandwidth, only]

To correctly reference the total average power within a 6 MHz channel, we have modified this figure to 46 dB. Thus, we will require that:

1) at the channel edge, emissions must be attenuated no less than 46 dB below the average transmitted power [measured in the entire 6 MHz DTV channel bandwidth];

2) more than 6 MHz from the channel edge, emissions must be attenuated no less than 71 dB below the average transmitted power [measured in the entire 6 MHz DTV channel bandwidth]; and

3) at any frequency between 0 and 6 MHz from the channel edge, emissions must be attenuated no less than the value determined by the following formula, which is based on a measurement bandwidth of 500 kHz [for the out-of-band emissions] ..."

CONCLUSION

NPSTC urges the Commission to move swiftly to meet the December 31, 1997, statutory deadline for reallocating 24 MHz to public safety in the 746-806 MHz band, to reallocate specifically spectrum currently assigned to UHF TV channels 63, 64, 68, and 69, and further to take all steps necessary to facilitate the rapid use of this spectrum by public safety.

Respectfully submitted,

NATIONAL PUBLIC SAFETY
TELECOMMUNICATIONS COUNCIL

Marilyn B. Ward
Interim Chairperson

October 14, 1997